



Public Administration Science in the Development of Digital Technology

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Abstract

The rapid development of digital technology is considered the fourth industrial revolution causing various changes, especially in the science of state administration. By using a qualitative approach, this paper explains how the direction of the development of state administration in Indonesia is currently in the flow of technological change and what challenges it faces. Seeing from the history of the paradigm shift that occurred in the science of state administration, the focus and locus of this science is very important because it can affect the perspective of the development of the science of state administration. The rapid development of technology is feared to be able to shift the central role of humans. For this reason, scientists are required to be able to contextualize the science of state administration and at the same time utilize digital technology to answer the public interest

Keywords: development of state administration; state administration; state administration challenges; technological development

Abstrak

Melesatnya perkembangan teknologi digital dianggap sebagai revolusi industri yang keempat menyebabkan berbagai perubahan khususnya pada ilmu administrasi negara. Dengan menggunakan pendekatan kualitatif, tulisan ini menjelaskan bagaimana arah perkembangan ilmu administrasi negara di Indonesia saat ini dalam arus perubahan teknologi serta tantangan apa yang dihadapinya. Melihat dari sejarah pergeseran paradigma yang terjadi dalam ilmu administrasi negara, fokus dan locus ilmu ini sangat penting karena dapat mempengaruhi perspektif perkembangan ilmu administrasi negara. Perkembangan teknologi yang begitu pesat dikhawatirkan dapat menggeser peran sentral dari manusia. Untuk itu para ilmuan dituntut untuk dapat mengkontekstualkan ilmu administrasi negara dan sekaligus memanfaatkan teknologi digital untuk menjawab kepentingan publik. Merefleksikan.

Kata kunci: perkembangan administrasi Negara; administrasi Negara; tantangan administrasi negara; perkembangan teknologi

Introduction

The disruption that occurs as a result of digital technology is considered as a 4th industrial revolution. Klaus Martin Schwab was the first to mention this industrial revolution (Ghufron in Rohida, 2018). He mentions that today the world is at the beginning of a revolution that is fundamentally changing the way we live, work and relate to one another. (Straubhaar, *et al*, 2011) describe the changes that people experience in their lives as a result of technological developments. Starting from the community before farming which was marked by a culture of speech or oral tradition (spoken words) with the condition of the community at this time in groups and living from hunting and farming. The technologies that developed in the era of the industrial revolution 4.0 have succeeded in influencing every kind of human activity and resulted in the emergence of new innovations that might not have been thought of before. As in the business world, many business fields have emerged as a result of the industrial revolution 4.0 such as the emergence of transportation with a ride-sharing system such as Go-jek, Uber and Grab. There are also businesses with room-sharing systems such as AirBnB.

The industrial revolution 4.0 has at least succeeded in making changes to the social system, enterprise system, physical system and biological system. The social system in question is about government, education, community health, and so on. Ghufron (in Rohida, 2018) in order to be able to survive in the era of the industrial revolution 4.0, he can implement 4C. First, critical thinking, namely by being skeptical and critical. Second, creativity, able to give birth to new innovations. Third, communication, especially about science and technology so that it can be accepted by the public correctly and does not cause misunderstandings. And fourth, collaboration, namely the ability to cooperate and collaborate with each other.

The application of technology into government services is actually not something new, considering that we are familiar with the concept of e-government. What distinguishes the condition of e-government from this 4.0 era is the sophistication of the technology. One of the technologies that is developing in this 4.0 era is big data. Generally, the business sector currently uses big data to be able to analyze the behavior of people and consumers. If the government uses big data, the government can quickly analyze people's preferences regarding an issue that occurs.

The disruption that occurred also influenced the scientific development of state administration. State administration science participates in utilizing technological developments such as using big data to analyze people's behavior and preferences regarding public policies. Therefore, the science of state administration which focuses on "public affairs" is also required to be able to respond to the industrial revolution 4.0.

Therefore, this paper answers two main questions, first, what is the direction of the development of administrative science in Indonesia in the context of changes in digital technology, and second, what are the challenges and opportunities faced by public administration in the digital era.

Methods

To answer the research question, this paper use qualitative approach to explore the research question. As a reflective of the development of public administration in Indonesia, this approach is uses to explain the findings from the data collected by literature study. The literature used in this study comes from newspapers and books.

Results and Discussion

State Administration as Public Administration in Indonesia

It should be understood that the science of state administration is said to be a science of public administration because the current role of the state is not as strong as in the early days of the emergence of state administration. There are various stakeholders that can be related to public affairs such as the private sector, the community, or non-governmental organizations. However, the science

of state administration does not have a "body of knowledge" with clear boundaries and a grand theory as possessed by other social sciences that are more established so that public administration science becomes very open and dynamic. This is an interesting characteristic considering its history, where there have been several paradigm shifts which can be interpreted that the science of state administration continues to develop following the changing public interests over time.

(Dwiyanto, 2018), in his book entitled *Public Administration Science in Indonesia Looking for Identity? Provide an explanation of what is actually learned from public administration. Furthermore, there are at least four studies presented by Dwiyanto, public administration science as government administration, as policy study, as governance study, the last one is as the study of the public.*

The science of public administration as government administration places the administrative process as the center of attention (focus) and government institutions as a place of practice (locus). The understanding of public administration science as a science of government emerged as a result of the widespread influence of scientists who tend to use institutional definitions of the public concept in public administration (Denhardt, 1995 in Dwiyanto, 2018). The development of public administration as a policy science is because the science of government administration is considered a failure. The function of the government is to accelerate socio-economic changes to realize public values and interests. Public policy is an instrument which is the output of the government. So that policy science is developed to make public administration increasingly play a role in accelerating the realization of public values and interests. If the concept of public in public administration is understood as public affairs and interests, public administration does not only care about government institutions, but also other institutions outside the government such as corporations and civil society organizations that care and operate in the public area. This is what makes public administration a study of governance. By developing an orientation on governance, public administration is more concerned with the use of all kinds of state, administrative, political and economic powers to manage public affairs and interests. The science of public administration as a study of the public is almost similar to the study of governance. In public studies, public administration focuses on institutions that operate in the public arena and work to serve the public interest and produce public values.

Based on the explanation above, the locus and focus of the science of public administration is very diverse, but the core of the science of public administration is related to the public interest. If you look at the academic world, several universities in Indonesia show their views on the science of public administration. Universitas Gadjah Mada, changed the department of state administration to management science and public policy. At the University of Brawijawa, the science of state administration becomes the science of public administration. Each university determines how to view the development of the science of public administration.

(Dwiyanto, 2018) leave many questions to the next generation about how the development of public administration in Indonesia. This is inseparable from the fact that the science of public administration that we have so far adheres to still refers to the American Public Administration. In fact, the conditions of Indonesia and America are very much different, especially in terms of culture.

The understanding of public administration science tends to differ depending on the scientific background, and the scientific vision among scientists. This causes the development of the science of public administration is very broad. If you look at universities that have public administration study programs, you can see that there are various different orientations that focus on certain aspects. Public administration science can be seen as a science that focuses on government administration, it can also be seen as a policy study or governance study.

In addition to following the subjects studied, public administration science is also influenced by the pressures of globalization which has led to the strengthening of democratization currents so that civil society is willing to participate in government activities, so administrative practitioners must be able to update the theory of state administration. Public administration is "very sensitive" in responding to the changes that occur. Therefore, administration science in Indonesia, especially in Bali, should have its own characteristics and orientation considering the existence of very strong cultural factors both in the bureaucracy, corporations as well as in the preferences of public interests. If viewed more specifically, culture plays a very important role in the life of the Balinese people. In its bureaucracy, the difference that is easy to see in Bali is the number of holidays for civil servants. There are differences in the number of holidays for civil servants in Bali with other regions in Indonesia. In Bali, the number of national holidays, collective leave and dispensation is 37 days

while for other regions it is 24 days.

This is an example of the different cultural aspects that occur in Bali and should be seen by public administration practitioners (especially in Bali) so that they can contribute a new orientation in the development of public administration science. (Thoha, 2011) says that the characteristics of this science are strongly colored by the characteristics of other sciences, while sciences such as constitutional law, sociology, and psychology have their own characteristics that also affect the existence of this science. The use of this scientific approach in the science of public administration, such as using psychology in observing behavior, the management science approach to seek efficiency and effectiveness, provides its own colors for the sustainability of the science of public administration.

Challenges and Opportunities Faced by Public Administration in The Digital Era

The industrial revolution 4.0 has made changes both in the private sector and in the government. The industrial revolution 4.0 also presents new problems, such as the emergence of online transportation, e-commerce, cybercrime, and others. Even when online transportation appeared in Indonesia such as Grab and Gojek, the government did not yet have a policy to regulate online transportation, and what the government did at that time was to prohibit online transportation. In this case, the government did not respond responsively to the changes that occurred.

For this reason, Bureaucratic Reform 4.0 emerged, which is a strategic idea that government organizations can implement to face the Industrial Revolution 4.0. Bureaucratic reform 4.0 includes three main aspects, namely collaboration, innovation and the use of information and communication technology. Collaborative governance can be interpreted as a way of governing with several government agencies involving stakeholders outside government institutions in joint decision-making that is formal, consensus-oriented, deliberative and aims to make or implement public policies (Ansell & Gash, 2017).

As a science, public administration must of course include technological factors into its discussion. Technology here can help explain the services provided by the government by using and utilizing technologies such as big data for example. State administration science must be able to put its perspective by analyzing the use of these technologies into services. Actually, this is not something new considering that previously we were familiar with the term e-Government.

Referring to (Dwiyanto, 2018) explanation regarding the various focuses and locus of public administration, it can be understood that each focus and locus of public administration science has its own challenges. When the science of public administration is considered as the study of government, the challenge lies in government organizations. In this case, the bureaucracy must carry out reforms that can respond to this technological development. Many things become important points about how the bureaucracy reforms itself. As previously explained regarding the design of the Bureaucratic Reform 4.0 strategy, public administration science as a government study must be able to be a "guide" on how to form reforms that can accommodate the industrial revolution 4.0. Of course, factors such as human resources, budget, infrastructure, coordination and so on remain interesting topics for public administration as a study of government.

Public administration as the study of policy has its own challenges. The challenge that can be seen in the study of policy is the concept of policy stages, which have existed so far that need to be reviewed by involving technology variables. Seeing the sophistication of developing technology, changing patterns of community interaction. If in the policy stage process, there is an agenda setting process, discussions with each stakeholder element to formulate agenda setting and the form is a meeting, currently, with big data technology, the government (in particular) can capture all people's preferences in an area in a matter of seconds. However, the condition that must be met to be able to implement this is that the community is (fully) connected to the internet. Several countries such as New Zealand have used big data technology in formulating a policy.

Different challenges will be faced by governance studies and public studies. In contrast to the two previous studies, namely the study of government administration and the study of policy, the main actor is the government. Governance studies and public studies cover a wider focus because in these two studies, the main point is about public affairs. And organizations that interact with the public are not only the government, there are the private sector, NGOs and civil society. So the

challenge faced is how the development of technology 4.0 can be useful for the "public interest". Moreover, this 4.0 industrial revolution brings negative effects as stated by the Deputy Chief of Presidential Staff for the Study and Management of Strategic Social, Cultural and Ecological Issues, Yanuar Nugroho (Prayitno, 2018), who said "The World Economic Forum estimates that during the 2015-2020 period it is estimated that millions of jobs will be reduced and replaced by machines, robots, artificial intelligence, and other computing devices." Overall, the challenges of public administration science in the era of the industrial revolution 4.0 must be able to remain relevant and can be used to analyze problems that occur in society. Because the problems that occur also experience a shift due to the development of this technology.

In term of public policy process, the use of big data is now emerging. Schintler & Kulkarni (2014) said that Web 2.0 service and technologies as well as other recent cyber and technological developments, are producing an enormous and unprecedented amount of data that are rich in detail concerning human and societal behavior and related contextual factors and dynamics, including the attitudes, preferences, and sentiment of different individuals and groups (see, e.g., Bollen, Pepe, & Mao, 2009; Gondecha & Lieu, 2012). Moreover, these data are not only voluminous, but also highly complex encompassing a variety of content formats (structured versus unstructured) and levels of spatial and temporal resolution. As a resource for helping to inform different points in the policy analysis process, from problem conceptualization to ongoing evaluation of existing policies, and even empowering and engaging citizens and stakeholders in the process, big data holds tremendous promise (Schintler & Kulkarni, 2014).

In the midst of the luxury of this technological development, there is a negative effect that millions of jobs will be replaced by robots. So many people are worried about the characteristics of the job field in the future. However, this seems to be answered by Japan by issuing a tag line that resembles the 4.0 revolution, namely Society 5.0. Japan seemed to answer the fears of replacing the role of humans with machines.

Society 5.0 is a human-centered social life that balances economic sophistication with the resolution of social problems by using a system that integrates cyberspace and physical space. It should be noted that society 1.0 is the condition of the hunting community, society 2.0 is the condition of the agricultural society, society 3.0 is the industrial society and society 4.0 is the condition of the information society. Social reform in Society 5.0 will achieve a state of social life by breaking the existing stagnation, community life where members respect each other, transcending generations and community life where each individual can live a pleasant life. The cool conditions achieved in Society 5.0 are as follows: current conditions, knowledge and information are not shared and cross-sectoral values are difficult to build and the conditions to be achieved are the use of the internet of things will connect all individuals and objects, all knowledge and information will be shared and This condition will create a new value. The current condition, with the flow of information, the job of finding and analyzing the desired information is very difficult and tiring, the condition to be achieved in Society 5.0 is that Artificial Intelligence (artificial intelligence) will free humans from the tiring work of analyzing large amounts of information. The current situation is that people do many great jobs but their abilities are limited and hampered by physical and behavioral challenges, the condition to be achieved in Society 5.0 is the opening of possibilities that are open for humans to develop through the use of robots, automated cars and others.

Seeing the innovations made by Japan in responding to the development of the industrial revolution 4.0 by issuing the Society 5.0 policy, it seemed as if it gave a breath of fresh air in seeing the positive benefits and directions of technological development. And this can be a reference, especially for young administrators. These technologies as McKinsey (2016) observes can assist local & central governments to accelerate service delivery in their constituents. New technologies brought by the Fourth Industrial Revolution can be used to improve the management of public finance in a transparent and accountable manner (OFE, 2015). From Society 5.0, it can be seen that the position of humans is still very important, and technologies such as artificial intelligence and robots, exist to help ease the work of humans. Of course, administrators are needed to be able to produce policies that lead to this condition. In addition, the government, as an organization that publishes policies, must be filled by people who are technology literate. Therefore, an administrator still needs his role, especially in this era of the industrial revolution 4.0.

Conclusion

The conclusions that can be drawn in this paper are, firstly, state administration scientists need to contextualize the science of state administration with the values contained in society, especially the Indonesian people, because so far the knowledge and development of state administration science comes from the perspective of the experience of Western countries.

Second, the challenge of state administration in the era of digital technology is more about how to take advantage of technological developments so that they can maximize administrators in responding to public interests, and keep technology focused on humans.

From this research, we suggest to empathize more on the digitalization effect on public administration and how to use big data or artificial intelligence to analyze issues related to public affairs as a future research agenda.

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